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# UPPER DESCHUTES RIVER and CROOKED RIVER WATERSHEDS

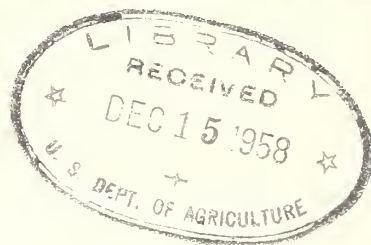
## WATER SUPPLY OUTLOOK

as of

APRIL 1, 1954

U. S. SOIL CONSERVATION SERVICE and OREGON AGRICULTURAL EXPERIMENT STATION

### S U M M A R Y



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- 1 Water Supply Outlook: Lands served by the Upper Deschutes River and Ochoco Creek will have adequate water supplies. The main Crooked River will probably provide only one good irrigation for late water rights.
- 2 Streamflow Forecasts: Forecasts in the Upper Deschutes area vary from 100 to 153 percent of the ten year average. Crooked River near Post will discharge about 50 percent of average and Ochoco Reservoir inflow is forecast at 46 percent average.
- 2 Reservoir Storage: All reservoirs have adequate water supplies.
- 2 Soil Moisture: Watershed soils are all well wetted and not frozen under the snow.
- 3 Snow Cover: Snow-cover on the Upper Deschutes is 92 percent of last year and 106 percent of average. On the Crooked River watershed snow is 74 percent of last year and 81 percent of average.
- 3 Precipitation: Fall precipitation in the Upper Deschutes and Crooked River watersheds was 120 percent normal. Winter precipitation was 118 percent normal. September through March, precipitation was 119 percent normal.



WATER SUPPLY OUTLOOK - For April-September, 1954<sup>a</sup>

Source of Water	Acreage Irrigated	Outlook
<u>Upper Deschutes River Basin</u>		
Crescent Lake	500	Walker Basin Irrigation Company will have adequate water from this source for lands near La Pine.
Deschutes River	4,234	Adequate water for the Deschutes Reclamation and Irrigation Company (Swalley Ditch) is assured by the main river flow.
Deschutes plus Crane Prairie Res.	46,500	Adequate water supplies. Inflow to Crane Prairie to be well above average. Arnold and Central Oregon Irrigation Districts will be adequately supplied.
Deschutes plus Crescent Lake plus Tumalo Res.	6,830	Adequate supplies from Crescent Lake and Tumalo Creek for Deschutes County Municipal Improvement District. (Tumalo Project).
Deschutes plus Wickiup Res.	50,000	North Unit lands in Jefferson County will have adequate water supplies. Wickiup Reservoir is full.
Three Creeks Lake	550	Adequate water for Snow Creek diversion.
Squaw Creek	9,800	Adequate for Squaw Creek Irrigation District except for late season shortages for late water rights and for Plainview and McAllister Ditches which should have water until mid-August.
Squaw and Pole Creeks	1,350	Adequate water for the former Sisters Irrigation District.
<u>Crooked River Basin</u>		
Bear Creek	2,500	Fair water supplies with late season shortage. Little or no snow-cover at middle and low elevations in the Maury Mountains.
Crooked River	35,000	Enough water for one good irrigation but late water rights will be short earlier than usual unless good summer rains are received.
Ochoo and McKay Creeks	8,500	Adequate water for Ochoo Irrigation District where storage is now 46,000 acre feet. Upstream water supplies likely to hold well in late season.

a - Assuming normal meteorological conditions during the April - September period.



# STREAMFLOW FORECASTS <sup>a</sup> as of April 1, 1954

No.	Gaging Station Name	Seasonal Streamflow in 1000 a.f.			1954 as % of Avg.
		Forecast 1954		Avg.	
		Apr-Sept	Apr-July	1942-51	
323	Crescent Cr. at Cres. Lk.*	35.0	-- --	22.9	153
314	L. Deschutes R., nr Lapine*	100.0	-- --	95.1	105
314	L. Deschutes R., nr. Lapine*	-- --	95.0	83.0	114
3212	Odell Cr. nr. Crescent	31.3	-- --	30.9	101
3225	Deschutes R., below Snow Cr.	70.0	-- --	65.8	106
3220a	Crane Prairie Res., net inflow	145.0	-- --	129.4	112
3123	Deschutes R., at Pringle Falls*	312.0	-- --	282.5	110
3123	Deschutes R., at Pringle Falls*	-- --	190.0	161.9	117
317	Deschutes R., at Benham Falls*	570.0	-- --	519.0	110
317	Deschutes R., at Benham Falls*	-- --	388.0	348.0	111
338a	Tumalo Cr., nr Bend*	51.0	-- --	50.7	101
335	Squaw Cr., nr Sisters	54.0	-- --	51.3	105
3421	Ochoco R., net inflow	15.0	-- --	32.8	46
342	Crooked R., nr. Post	65.0	-- --	128.3	51
* Corrected to natural flow		a -- not available			

## RESERVOIR STORAGE

Reservoir	Usable Capacity 1000 a.f.	Thousand a.f. in storage about April 1, 1954			as % of 10 Yr. Avg
		10 yr. Avg			
		1954	1953	1942-51	
Ochoco	46.0	46.8**	46.8	30.2	155
Crescent Lake	54.9	38.7**	52.0	43.3	89
Crane Prairie	55.3	56.2	50.7	39.9	141
Wickiup	187.3	199.8	199.1	105.1*	190
Total					
(4 Reservoirs)	343.5	341.5	348.6	218.5	156
* 1943 - 51		** Spilling			

## SOIL MOISTURE

Soils in:	Fall Status	Current status as of April 1, 1954
Lower Valleys	Well Wetted	Fairly well wetted
Upper Valleys	Well Wetted	Well wetted
Mountains	Well Wetted	Well wetted

SNOW COVER - As of April 1, 1954

Snow Course			1954		Water Content (in)		1954
No.	Name	Elev.	Snow Depth (in)	Water Content (in)	1953	Average	as % of Avg
<u>Upper Deschutes River Basin</u>							
-	below 5000'	-					
333	Black Pine Spg. *	4600'	9.7	2.7	1.2	5.4	50
326	Caldwell Ranch	4400'	24.5	10.6	14.7	9.1	116
321	Cascade Summit	4880'	96.4	37.8	34.8	31.7	119
834	Chemult	4760'	27.4	11.6	16.3	10.0	116
325	Crescent Lake	4760'	27.8	13.3	14.5	10.5	127
3211	Hungry Flat*	4400'	19.0	8.0	3.1	3.1	258
	Average		-	14.0	14.1	11.6	121
-	above 5000'	-					
327	Charlton Lake	5750'	94.9	33.3	34.7	28.6	116
329	Irish-Taylor *	5500'	107.4	42.4	46.9	53.2	80
3214A	New Dutchman Flat	6400'	133.3	60.2	64.8	52.7	114
3210	Tangent *	5400'	56.5	26.0	27.6	32.3	80
331	Three Ck. Mdns.	5600'	58.6	24.3	22.6	20.8	117
521A	Waldo Lake	5500'	93.9	33.4	34.5	29.7	112
323	Willamette Pass	5600'	128.1	53.1	50.0	48.7	109
744	Windigo	5800'	119.2	52.2	54.0	55.1	95
	Average		-	40.6	41.9	40.1	101
	Average (14 Snow Courses)		-	29.2	30.0	27.9	105
<u>Crooked River Basin</u>							
343	Derr	5670'	28.7	9.2	12.8	10.7	86
344	Marks Creek	4540'	4.2	1.6	0.7	3.1	52
341	Ochoco Mdns.	5200'	24.4	8.1	12.2	9.7	84
965	Snow Mtn.	6300'	36.0	12.3	16.2	15.2	81
	Average (4 snow courses)		-	7.8	10.5	9.6	81

\* Short record

PRECIPITATION DATA

Station		Precipitation (Inches)								Avg. as %
Name	Elev.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Avg Normal*	of Normal
Bend	3599	0.61	0.47	2.66	1.89	4.30	0.74	0.52	1.60	1.28
Chemult	4760	0.20	1.18	6.42	3.31	9.14	2.10	2.37	3.53	3.01
Madras	2300	T	0.48	2.04	1.62	2.00	0.41	0.64	1.03	0.88
Ochoco RS	3979	0.10	1.08	4.72	2.88	2.65 <sup>e</sup>	0.51	1.46	1.91	1.70
Prineville 2NW	2868	0.27	0.95	2.27	1.89	1.32	0.20	0.52	1.06	0.83
Average		0.24	0.83	3.62	2.32	3.88	0.79	1.10	1.83	1.54
Normal*		0.72	1.07	2.11	2.10	1.84	1.72	1.22		
Avg. as % of Normal		33%	78%	172%	110%	211%	46%	90%		
Fall (Sep-Oct-Nov)		120%								
as % of Normal										
* as published USWB					e - estimated					

